Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Establishing the Digital Opportunity Data Collection	)	WC Docket No. 19-195
	)	
	)	
Modernizing the FCC Form 477 Data Program	)	WC Docket No. 11-10

Comments of
Alexicon Telecommunications Consulting

Alexicon Telecommunications Consulting (Alexicon) files these comments in response to the Second Further Notice of Proposed Rulemaking (NPRM) issued in the above-captioned proceedings relating to implementation of new broadband mapping and reporting procedures.[1]

Alexicon provides professional management, financial and regulatory services to a variety of small rate-of-return Incumbent Local Exchange Carriers (ILECs) and their affiliates who serve diverse geographical areas characterized by rural, insular or Native American Tribal Lands. These ILECs, similar to most other small rate-of-return regulated ILECs, currently provide a wide range of technologically advanced services to their customers. These companies, through participation in various State and Federal high cost funding programs, and with their continued investment in network infrastructure, are providing customers in rural, insular and Tribal areas with services equal to or greater than urban areas, and at comparable pricing. Furthermore, these ILECs are

[1] *In the Matter of Establishing the Digital Opportunity Data Collection,* Report and Order and Second Further Notice of Proposed Rulemaking, WC Docket No. 19-195, (FCC 19-79, rel. August 5, 2019) (*Report and Order or NPRM*)

committed to providing their customers with innovative solutions, by adapting technologies that fit rural America, including broadband and IP-enabled services.

SUMMARY

The Commission has taken a reasonable first step for determining broadband availability at a more granular level as compared to what is collected today. It is clear that the current broadband data collection process – Form 477 – was not designed to gather the information the Commission and other stakeholders need and has outlived its usefulness. However, while the Commission's crowd source-based polygon filings should provide some positive effects on national broadband reporting, more work must be done to ensure the process is properly balanced between generating additional accuracy with the additional burden placed on reporting carriers. Alexicon will provide the Commission with ideas on how to properly consider this balance.

I. BACKGROUND

In the *Report and Order*, the Commission correctly recognizes the need for more granularity in broadband data reporting, and takes a good first step by supplementing current Form 477 submissions with a polygon file-based reporting requirement.[2] Under the Commission's revised structure, polygons will be drawn on maps to depict areas where certain services and speeds are available. These maps can then be filed with USAC for inclusion in the national broadband mapping effort, and would be subject to a crowd-sourced verifications process where state, local, and Tribal governments, along with members of the public at large, will be able to provide input as to the accuracy of the carrier-submitted data.[3]

[2] *Report and Order* at 12
[3] *Id.*, at 18

The Commission raises a number of issues in the *NPRM* that are key to implementing the polygon and crowd sourced-based reporting method adopted. In addition, the Commission requests comment on whether and how to further improve accuracy, reliability, and utility of broadband data by adopting a location-based reporting requirement. The location-based reporting proposal is largely based on the Broadband Serviceable Location Fabric (BSLF) method presented by the Broadband Mapping Coalition.[4]

II. TECHNICAL STANDARDS FOR FIXED BROADBAND REPORTING

In order to properly implement the polygon-based broadband data reporting structure adopted in the Report and Order, the Commission asks a number of questions concerning the technical specifications for the polygon system to be used by fixed broadband providers. In general, the Commission inquires as to the types and levels of proscriptions to be placed on the generation and filing of polygons, and whether there is any set of such specifications that can properly balance burden and accuracy.

Alexicon recommends the Commission takes additional steps to ensure the polygon-based reporting regime adopted strikes a reasonable balance between accuracy and burden. To this end, Alexicon held a series of ex parte meetings with Commissioner's Office Staff subsequent to the release of the draft *Report and Order* and *NPRM*.[5] In those meetings, Alexicon "presented the idea of allowing small broadband providers to report deployment subject to a certain margin of error, which should provide a reasonable balance between the accuracy needed and the burden placed on those reporting. In addition, the method discussed would be compatible with the broadband coverage polygon filing method contemplated in the draft *Report and Order*, and would overlay

[4] *NPRM* at 100
[5] See Notice of Ex Parte Communication, filed July 18, 2019 in WC Docket Nos. 19-195 and 11-10

easily with any location-based method considered such as that discussed in the draft Second FNPRM." While the Commission appears to disagree with Alexicon's position regarding a "certain margin of error"[6] that can be used for broadband deployment reporting, it also appears that in the *NPRM* the Commission requests comment on this very issue when it asks "What will the cost be on the fixed broadband industry to produce reliable deployment data? Also, is there anything that can be done to lessen reporting burdens on all filers as part of the new collection…?"[7]

Alexicon reiterates its position that reporting broadband deployment, especially under the Commission's new polygon file-based system, subject to a reasonable margin of error will provide for a reasonable balance between burden (cost) and accuracy. This balance will especially be important during the beginning stages of the new polygon-based reporting as reporting carriers become accustomed to the new rules, USAC fine tunes its customer facing and back office systems, and the crowd sourcing process takes effect. Many small carriers, at least at first, will have to outsource the polygon file generation and other tasks to ensure the submitted data is as accurate as possible. All of this requires resources - for labor *and* outside costs.

The Commission discusses a lengthy list of potential technical specifications in the NPRM.[8] Among the specifications listed are the possibility of adopting some sort of buffer around network facilities to define coverage, how to account for transport capacity, and whether to account for latency.[9] Alexicon suggests that adding any of the contemplated specifications will serve to increase cost and burden for reporting carriers, and will add little, if any, benefit in terms of broadband data accuracy. Instead, the Commission should rely on carriers to accurately report (and verify) the broadband availability data, require USAC to perform certain automated review

[6] *Report and Order* at 23
[7] *NPRM* at 82
[8] *Id.*, at 79
[9] *Id.*, at 81

functions (i.e., check study area boundaries and compliance with polygon filing rules), and use the crowd sourcing input to ensure data reported is reasonably accurate. Further, the Commission's upcoming broadband performance testing requirements should ensure that speeds advertised and reported are actually achievable.

Specifically, requiring polygon-based broadband availability reporting based on a buffer zone[10] or on homes passed may present additional difficulties (burden) on small carriers.[11] Both of these proposals require detailed and accurate network maps capable of being digitized and manipulated so as to allow overlay of a buffer zone and/or a count of homes passed. Many small carriers either do not have these types of maps available, or would have to quickly generate such maps, at significant cost and effort, in time for reporting. Instead of this detailed proscription of reporting specifications, the Commission should allow carriers, subject to a determined margin of error, develop broadband coverage polygons in any manner reasonably designed to provide accurate and granular information.

III. CROWD SOURCING

Alexicon appreciates the Commission's unique approach to providing additional assurance that reported broadband availability is accurate by inviting public input. Of particular importance will the review and input provided by state, local, and, especially, Tribal governments. However, the effectiveness of crowd sourcing is only as good as the crowd, so the Commission must adopt rules that ensure the process takes into account only legitimate concerns, provides for a simple

[10] A buffer zone is essentially a pre-established geographic zone placed around certain network facilities. The area falling within these zones are then deemed to have broadband service of certain performance characteristics available.
[11] *See NPRM* at 79

process for addressing any undisputed discrepancies, and allows reporting carriers to make any necessary corrections without fear of immediate reprisal.

Input and review from state, local, and Tribal governments will be important for the crowd sourcing process as these entities will (1) have the most intelligence on the ground as to the accuracy of reported data and (2) more than likely have a working relationship with reporting carriers within their jurisdiction. Crowd sourcing will be particularly important for Tribal governments due to the unique circumstances on the ground in Tribal areas, and the fact that these areas, in particular rural Tribal areas in the lower 48 states, show substantially less broadband availability as compared to the rest of the United States.[12] Tribal governments, therefore, have a vested interest in ensuring broadband availability data, which has been shown to be overstated in Tribal areas[13], is as accurate as possible. To this end, Alexicon urges the Commission to initiate an outreach program for Tribal governments as soon as possible to allow effective outreach under the DODC crowd sourcing program.[14] Such outreach could be initiated with organizations such as the National Congress of American Indians (NCAI), the National Tribal Telecommunications Association (NTTA), and Native Public Media and could be conducted by the Commission or USAC via the Commission's Office of Native Affairs and Policy (ONAP).

The Commission recognizes the importance of managing the crowd sourcing process so as to balance the need for corrected data against provider burden.[15] It will also be vital that this process be designed to "avoid bad-faith or malicious challenges to coverage data."[16] At most,

[12] *See In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2019 Broadband Deployment Report (FCC 19-44, rel. May 29, 2019)
[13] See GAO Report GAO-18-630, *Broadband Internet: FCC's Data Overstate Access on Tribal Lands* (September 2018)
[14] *NPRM* at 92
[15] *Id.*, at 93
[16] *Id.*, at 97

USAC should only alert providers once a statistically significant number of "challenges" about a specific provider's area has been received and subjected to an initial review by USAC. Alexicon further suggests that small rural providers be allowed to group and analyze any crowd sourced input provided by USAC, determine whether the comments received are legitimate or represent disputed claims based on this analysis, and respond to USAC accordingly. For example, a certain provider may receive a number of complaints about a discrete portion of its service area and determine that the polygon filing does misstate the reported speed based on an analysis of the customers providing input. This correction would then be made on the next scheduled reporting date, unless the correction represents a systemic issue with the provider's reporting processes. In this way, the provider would be able to respond to groups of customer challenges and not to individual challenges filed at random times, and would thus be different from the typical customer complaint process where each complaint is handled separately.

IV. INCORPORATING LOCATION INFORMATION

Alexicon agrees that incorporating national location information in the DODC process will result in more useful and accurate information. As noted, the coverage polygons adopted in the *Report and Order* will only provide a certain level of information, and will not show locations that have and do not have broadband service available.[17] For example, coverage polygons will show broadband availability over a certain area, but without further data (such as location data), it will be unknown whether the coverage area is uninhabited or not.

[17] *Id.*, at 99

The Broadband Mapping Coalition (BMC) recently filed a report on key findings related to its Proof of Concept Pilot for the BSLF process.[18] The Pilot was conducted in Missouri and Virginia and was designed to "demonstrate the feasibility of identifying the precise number and location of every structure in the states that require broadband access…" The report states "using state of the art technology and a combination of public and commercial datasets, it is now possible to identify and precisely locate virtually every structure in a geographic area that is capable of receiving broadband. Developing the Fabric for two states shows it is possible to do so for the entire country." Alexicon agrees that generating a dataset such as the BSLF could provide the Commission, other industry stakeholders, and consumers with important information regarding actual broadband availability, but should be undertaken with a measure of caution.

Beyond the technical and practical considerations surrounding the generation of a database containing the location of every broadband serviceable home, business, building, or structure in the United States, Alexicon raises a caution about two specific areas. First, it appears that the BSLF relies, at least in part, on placing one serviceable location per parcel.[19] Parcel data in Tribal areas, in Alexicon's experience, is inconsistent at best. Prior to embarking on a national BSLF process, the BMC and it's administrator, CostQuest Associates, would have to perform additional testing in Tribal areas to ascertain the efficacy of its processes and if they can indeed scale nationally. Second, the BSLF by necessity relies on a combination of open and closed source data, such as Microsoft Rooftops, some of which do not consistently or accurately identify locations in some areas in Alaska and in many Tribal areas in the lower 48 states. Again, further testing is necessary before concluding that the BSLF is reasonable to use in Alaska and Tribal areas.

[18] *See* Ex Parte letter and report filed August 20, 2019 in WC Docket Nos. 19-195, 11-10, 10-90, and 19-126 (*BMC Report)*
[19] *See e.g., BMC Report* at p. 28

Finally, the Commission requests comment on an Alexicon recommendation made in its July 8, 2019 Ex Parte filing – that a broad definition of location lowers both the reporting burden for providers and the underlying cost of identifying locations.[20] Alexicon recommends that any location identified be afforded a default of being a serviceable location. While there should be some exceptions, such as abandoned buildings, the majority of locations in rural areas should be deemed "serviceable." There are several reasons for this, such as the continued development of the Internet of Things (IoT), precision agriculture, and home-based businesses. Treating rural locations in this manner would also decrease the need for managed visual review, which the BMC finds is costly and indeed would be extremely costly in sparsely populated rural areas. Alexicon's recommendation would also allow for greater clarity in meeting certain defined deployment obligations, such as those adopted for recipients of Alternative Connect America Cost Model (ACAM) support and Connect America Fund Broadband Loop Support (CAF BLS). Especially with the CAF BLS deployment obligations, which are not based in any real count or consideration of actual locations, having a broadband availability regime that allows for counting locations as broadly as possible would benefit small rural carriers.

V. OTHER ISSUES

A. In the *NPRM*, the Commission raises the possibility of combining other datasets with the DODC information.[21] Alexicon agrees that this is a legitimate issue to raise, and recommends the Commission add to the DODC dataset information on which areas are receiving funding for the provision – either current or planned – of broadband service. Funded areas are a key part of understanding the overall broadband landscape in the country, especially rural areas.

[20] *NPRM* at 101
[21] *Id.*, at 84

Layering this type of data on to the DODC dataset would provide for something closer to a single information source for those requiring knowledge as to where broadband is and is not available, and whether funding sources (i.e., federal and state USF, RUS loans and grants) are already devoted to that area.

B. Alexicon notes that administration of the DODC and, potentially, of the national location dataset, will be left to USAC. USAC currently administers all federal USF programs, including High Cost, Lifeline, Rural Health Care, and schools and libraries, other related items such as audits of funds and contributions, Form 481, and the current CAF reporting portal (HUBB) as well as the Connect America Fund map. Prior to adding to USAC's responsibility list, Alexicon suggests the Commission ensure USAC has the resources necessary to administer the DODC, with any additional layers such as the BSLF, and further has discharged its current duties in the most efficient and effective ways possible.[22]

CONCLUSION

The Commission's changes to broadband availability mapping represented by the Digital Opportunity Data Collection process are a good first step to ensuring such data is more granular, accurate, and useful. Moving from the Form 477's recognized problems, such as the one-served-all-served issue where an entire census block is deemed covered if one customer in that census block is served, to a polygon-based system will ensure increased granularity. For accuracy, relying

[22] Alexicon notes the apparent difficulties USAC has experienced in implementing and maintaining the High Cost Universal Broadband (HUBB) system and related filing requirements. *See e.g., Blackfoot Telephone Cooperative, Inc. and Fremont Telcom Company: Request for Limited Waiver of March 1, 2018 Deadline for Certifying Broadband Locations in the High Cost Universal Broadband System for Alternative Connect America Cost Model Funding,* filed April 25, 2019 in WC Docket No. 10-90 and *Ketchikan Public Utilities Petition for Waiver of March 1, 2018 HUBB Portal Certification Deadline*, filed May 9, 2019 in WC Docket Nos. 08-71, 14-58, and 16-271. Both petitions document in detail many problems carriers are experiencing with USAC's administration of the HUBB.

on crowd sourcing and managed review by USAC is reasonable, as long as both processes work efficiently and effectively. Finally, additional usefulness can be gained by incorporating some type of location information with the availability data reported by carriers, thereby allowing for a look at where broadband service is *not* available, as well as where it *is* available.

Alexicon cautions the Commission to not adopt a substantial number of detailed technical specifications for submitting polygon-based broadband availability data. Instead, reporting fixed broadband carriers, especially small rural carriers, should be allowed to submit polygon files depicting where broadband meeting the Commission's specifications, is available or can be available within a given time frame (i.e., 10 business days).

For crowd sourced broadband data accuracy reviews, Alexicon recommends the Commission adopt a process where after USAC receives a statistically significant amount of legitimate input about a specific area, the information is brought to the reporting carrier for resolution. Alexicon does not recommend the crowd sourcing process result in a customer complaint-like system where the carrier is required to respond to each comment.

Incorporating location information with the DODC will need to include a process to ensure locations on Tribal lands and in Alaska are able to be accurately determined. While Alexicon appreciates the work that went into the Proof of Concept Pilot and resulting report, it appears that Tribal lands and areas in Alaska were not included and will require further effort before proceeding.

Respectfully Submitted,

Alexicon Telecommunications Consulting

September 23, 2019